APPLE™ / ATARI®

Number Series

GUIDE

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INTRODUCTION

The number series problem is a very common type of math question on IQ tests and other aptitude tests. Although they are not found on the Scholastic Aptitude Test, they are excellent practice for dealing with SAT-type math problems. They help sharpen problem-solving skills and they provide practice in using basic mathematical principles.

A number series problem gives you a list of numbers that are related by some rule. You must discover the rule to determine what the next numbers in the series should be. Here is an example:

3 7 11 15 19 23 ? ?

The rule is: Add 4 to each number to get the next. Therefore, the next two numbers are 23 + 4 = 27 and 27 + 4 = 31.

Of course, number series get much more complicated. *Number Series* will help you develop the skills needed to analyze any number series problem.

ORGANIZATION OF THE COURSE

APPLE™ version: The course consists of 10 programs. The first program is an introduction that explains how to solve number series problems. The next eight programs are practice lessons. Each presents 25 problems. Each lesson is more difficult than the one before. The final program is a test.

ATARI® version: The course consists of two parts: an introduction that explains how to solve number series problems and a program that generates number series problems for you to solve. You choose the level of problem difficulty desired: easy, medium or hard.

When a number series problem appears on the TV screen, you will be asked to type in the next two numbers in the series. For example:

2 4 6 8 10 12 14

You type the two numbers, with a comma between them.
The next two numbers are: ?
16, 18
Then press the RETURN key.

The computer tells you if you are right or wrong. You get three chances. If you make two mistakes on a problem, the computer gives you a hint. After your third mistake, the computer tells you the answer to the problem.

After every problem you may stop the lesson and see your score.

METHODS FOR SOLVING NUMBER SERIES

Here are some methods that will help you analyze and solve number series problems:

1. Read through the problem: you may see the pattern right away.
   Example: 3 3 4 4 5 5 6 ? ?
   The next two numbers are: 6, 7

2. Calculate the difference between each pair of numbers. Look for a pattern.

   (−2) (+3) (−2) (+3)

   Examples: 5 ◆ 3 ◆ 6 ◆ 4 ◆ 7 ? ?
   The rule is subtract 2, add 3. The next two numbers are: 5, 8

   (+1) (+2) (+3) (+4)
   1 ◆ 2 ◆ 4 ◆ 7 ◆ 11 ? ?
   The amount of change increases by 1 each time.
   The next two numbers are: 11 +5 = 16, 16 + 6 = 22

3. Look for alternating series (two series combined in one).

   Example: 1 21 3 19 5 17 7 15 ? ?

The next number in the first series is 9. The next in the second series is 13.

4. Look for groups of numbers within a series or other patterns if the above methods don't work.

   Example: 1 2 3 11 12 13 21 22 ? ?
   Each group of 3 numbers starts 10 greater.
   The next two numbers are: 23, 31

HOW TO USE THE COURSE

Follow directions in your computer manual to load each lesson.

Cassette version (ATARI®): Side A of the tape cassette contains a voice introduction. Side B contains the program that generates number series problems.

Disk version (APPLE™, ATARI®): When the disk is loaded, the menu appears on the TV screen. Indicate the program you wish to see.

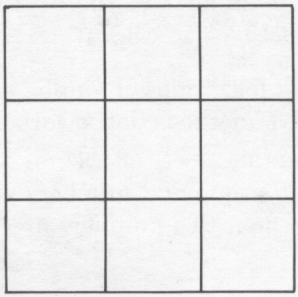
Begin with the first program in the course, even if you think you know enough to skip ahead. You can make a practice session last as long as you wish. If you want to stop for more than a few minutes, it is best to turn off the computer and TV.

ADDITIONAL ACTIVITIES

Here are some additional activities that will improve your ability to solve number series problems:

1. Tackle math puzzles. There are a number of books that present brain-tickling problems that require you to use logic and math skills . . . and your imagination. Here is one such puzzle:

Place numbers in the boxes so that all the vertical and horizontal rows equal the same total.



2. Create your own number series problems. Ask your friends to solve them. (Be sure you have the solutions written down before you give the problems to your friends!)

NOTES

THE PDI HIGH-TESTERS

The courses in this series are designed to develop the problem-solving and other skills needed to do well on IQ tests and aptitude tests such as the Scholastic Aptitude Test (SAT). Each course covers a specific category of questions commonly found on IQ and aptitude tests.

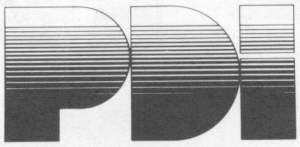
Vocabulary Builders I and II—These two courses are designed to help develop a student's vocabulary, and to build skills needed to answer synonym and antonym questions.

Analogies—This course describes the common types of analogies and provides practice in analyzing and solving analogy problems.

Number Series—This course teaches students how to analyze number series patterns and provides practice in number series problems.

Quantitative Comparisons—This course reviews mathematics, from elementary arithmetic through algebra and plane geometry, and provides practice in solving the types of mathematics problems found on standardized tests.

The five courses are sold individually. The ATARI® versions are also available as part of a package entitled **Preparing for the SAT.**



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